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THE
SCIENTIFIC AMERICAN:
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Poetry.

WASHINGTON'S MONUMENT.

BY G. P. MORRIS.

A monument to Washington ?
A tablet graven with his name ?
Green be the mound it stands upon,
And everlasting as his fame.

His glory fills the land ; the plain,
The moor, the mountain and the mart.
More firm than column, urn or fane,
His monument—the human heart.

The christian—patriot—hero—sage!
The chief that heaven in mercy sent ;
His deeds are written on the age—
His country is his monument.

"The sword of Gideon and the Lord,"
Was mighty in his mighty hand :—
The God who guided, he adored,
And, with His blessing, freed the land.

The first in war—the first in peace—
The first in hearts that freemen own :
Unparalleled—till time shall cease—
He lives—immortal and alone!

Yet let the rock-hewn tower arise,
High to the pathway of the sun,
And speak to the approving skies,
Our gratitude to Washington.

LIFE.

Life is onward : use it
With a forward aim ;
Toil is heavenly : choose it,
And its warfare claim,
Look not to another
To perform your will,
Let not your own brother
Keep your warm hand still.

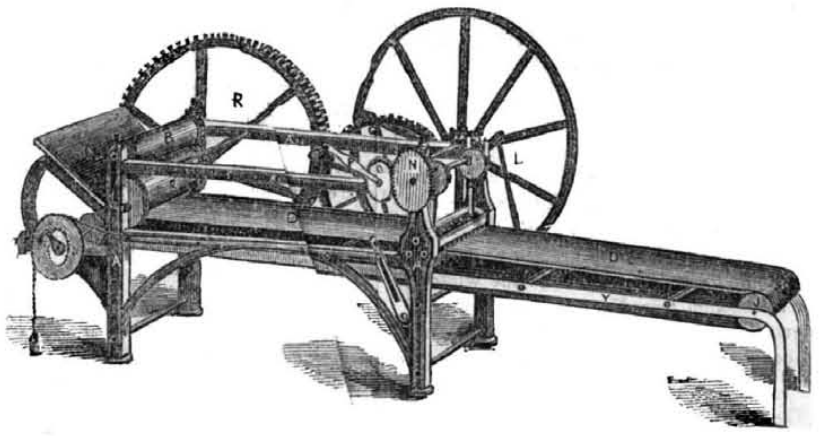
Life is onward · never
Look upon the past;
It would hold you ever
In its clutches fast.
Now is your dominion,
Weave it as you please :
Bind not the soul's pinion
To a bed of ease.

Life is onward ; try it,
Ere the day is lost;
It hath virtue,—buy it,
At whatever cost.
If the world should offer
Every precious gem,
Look not at the scoffer,
Change it not for them.

Life is onward ; heed it
In each varied dress ;
Your own act can speed it
On to happiness.
His bright pinion o'er you
Time waves not in vain,
If Hope chant before you
Her prophetic strain.

Life is onward : prize it
In sunshine and in storm ;
Oh! do not despise it
In its humblest form.
Hope and joy together,
Standing at the goal,
Through Life's darkest weather,
Beckon on the soul.

NEVINS' IMPROVED CRACKER AND BISCUIT MACHINE.



It is highly important where large quantities of biscuit are made for sea, either for the commercial or war marine, that there should be some machine for the speedy preparing of such kind of provisions, so as to preserve the flavor and quality of the flour, which we well know is not the case with all kinds of bread as some will not keep fresh longer than two or three days. The machine represented in the above engraving was patented some years ago by W. R. Nevins of this city, and although there have been a number of machines built for the same purpose as it, yet good judges have pronounced it to be the most superior machine of the kind in existence and in its present improved condition, without a rival. One of these machines was put up at St. Augustine during the Florida war, and it was of great benefit to the troops there. It has been examined by commissioners of the British Navy and has met their entire approbation.—The Brazillian Government has also requested one to be sent them, and there are orders from Norfolk, Va., and Louisville, Ky., to be supplied during the winter. Thus showing that it is no common machine.

DESCRIPTION.—A A A A, is the frame ; B, are two feeding rollers, the dough being fed into them on the board C. D D, is an endless band the same width as the feed rollers. This band is for carrying the dough from the feed rollers to the cutters and forward of the cutters on the band frame Y, to be taken off after the dough is cut into the desired size and form. The frame Y, on which the band D runs over the roller C, can slide under the machine when the machine is not in operation, so as to occupy as little room as possible. P, is a crank for working the machine, and on the crank shaft is a cog wheel O, meshing into a larger cog wheel N. The cog wheel N moves the cutters, not in a rotary motion but up and down cutting the biscuit clean by the reciprocating motion ingeniously combined with the rotary by two eccentrics on the shaft, which will be observed between N and the larger, or fly wheel, on the other side of the frame. While the cutters are moved by N, the shaft of O gives motion to the cog wheels on the other side of the frame and by the accumulation of power on the fly wheel, the the whole apparatus is very easily worked.—The cog wheel G, meshes into the cog wheel R, for the purpose of giving the feed rollers a uniform speed, something very necessary, as bakers know, so that there may not be too much friction by the rollers, in which case crackers and biscuits are afterwards apt to split open and in warm latitudes soon spoil. The endless band is made to bring forward the dough by two cranks, one seen on the opposite side of the frame inside of the fly wheel, which works a pendulum shaft below the [illegible] P, on which is a cord passing over a pulley at the end of the feed board C ; on the end of this cord is a weight which works by the pendulum the toothed pulley, on which is a clamp to slip and cut the exact distance the band is wanted to move for every cut of the cutters, for the band D, passes over the roller of the toothed pulley, on which is the cord, and round by C. There is a slot in the pendulum shaft, so that the pin can be moved up or down, for a long or short cut, and by the shifting or changing the tooth wheels O and N, the speed of the cutters will be increased while the rest of the machine keeps a uniform motion. It will be observed that the cutters do not fall or press down upon the canvass direct from the shaft, there is a plate between the canvass and the cutters, so that a fine clean cut is made through the dough.

One of these machines with cutters only for the biscuit in the breadth of the frame has cut as fast as one in use in the British Navy with fifty cutters, thus showing a great superiority, but the best recommendation comes from those who have them in operation, Mr. Stratton, of Brooklyn, and Mr. Wilson, of this city, who speak in the highest terms of their qualities. This machine is the invention of Mr. W. R. Nevins, No 609 Greenwich street, this city, who manufactures them, or to 87 Eldridge st.

Natural Curiosity.

The Lehigh Reporter says that large pieces of crystallized copperas, apparently as pure as that sold in Stores,—is found in large quantities on the land of Peter Breinig, in upper Macungy township, Lehigh Co., Pa. Copperas ore was mined for a number of years on this tract by Mr. Whitely, but never before was the pure article taken out, and that in lumps varying from ten to fifty pounds.

Russia and Austria.

The emperors of these countries have forbidden all persons to erect magnetic telegraph unless by their special permission.

Those beings are only fit for solitude who like nobody, are like nobody, and are liked by nobody.

Sub-Marine Telegraphs.

The *London Mining Journal* for August 14, contains a project for laying down a Telegraphic line of communication between the west of Ireland and Nova Scotia, to be composed of shut copper wires twisted, enclosed in an india rubber pipe. Suppose that it did not break in the middle, would not anchors, wrecks, &c, near the shore, interfere with its permanence?

Daring Feat of a Fireman.

Mr. Richard Mosely, a member of the Plunnix Engine Company of St. Louis, entered a grocery while the counter was wrapped in flames, and took out from under it a keg and canister of gunpowder, and bore them to the street uninjured.

RAIL ROAD NEWS.

St. Lawrence and Atlantic Railroad.

When this road has been completed, it is calculated that a barrel of flour will be conveyed from Cleveland, Ohio, to Portland, Me., for one dollar and twenty five cents, whereas now it costs by coming round by this city about two dollars, and sometimes far more. Fifteen hundred thousand dollars have been subscribed for this road in Montreal; this, however, is but a small portion of what is required to construct the whole road. A cargo of rail iron for this road arrived at Portland a short time ago, from Wales. It amounted to about 400 tons.

Hudson River Railroad.

This road is progressing rapidly and it is expected that it will be open from this city to Poughkeepsie by the Fall of 1848.

Indianapolis Railway.

A public meeting has been held at Winchester, Randolph County, Indiana, to forward a Railway from Indianapolis to Bellfontaine Ohio, where it will intersect the road from Sandusky to Cincinnati. Great interest was manifested in the proposed route, and the opinion was expressed that the citizens of Randolph county alone, were able without cramping themselves, to construct a road through their County.

Rail Roads in Virginia.

Great interest is beginning to be felt in Virginia, on the subject of Railroads. Numerous meetings have been held at various points and great efforts are making to arouse public attention to this [illegible] vention, held at Lynchburgh, the following among other spirited resolutions were adopted;—

Resolved, That in the opinion of the convention, no improvement could be constructed in Virginia, which would tend more to promote the prosperity of every portion of the State, than the great thoroughfare between the East and the West proposed that in the act of Incorporation of the Richmond and Ohio Railroad company, and that such an improvement supported as it would be by the trade and travel of the West, would build up the seaports of the State, and the inland towns on the route and give a development to the agricultural and mineral resources of the commonwealth, which can only be conceived by witnessing the effect of similar improvements in our sister States.

Railroads in England and Scotland.

In England and Scotland there are finished and in operation at the present time, railroads to the extent of : : 3,605 miles
In progress of construction, : 6,465 "
Incorporated in 1847–7, : 5,618 "

Total : : : 15,688 miles.
Area of England and Wales, 57,800 sq. miles.
Area of Scotland, : : 26,014 "

Total, : : 83,814 sq. miles.

St. Lawrence and Champlain Canal.

It is contemplated to construct a canal between Lachine and St. John's, Canada, a distance of nineteen and a half miles, which will allow steamers to pass through from Lake Champlain to the St. Lawrence, and by enlarging the Northern Canal from Whitehall to Troy of the same size as the Canadian Canals (say 45 feet lock,) New York would have a Ship Canal to Chicago, and vessels, without discharging, could bring 4000 barrels or 17,000 bushels of wheat or corn, in the same order and condition as when first shipped at the mill or warehouse in the West.

Detroit and Chicago Telegraph.

The line between the two cities will be in lightning order by the first of December, if the work prospers properly. By the fifteenth of that month "any how."

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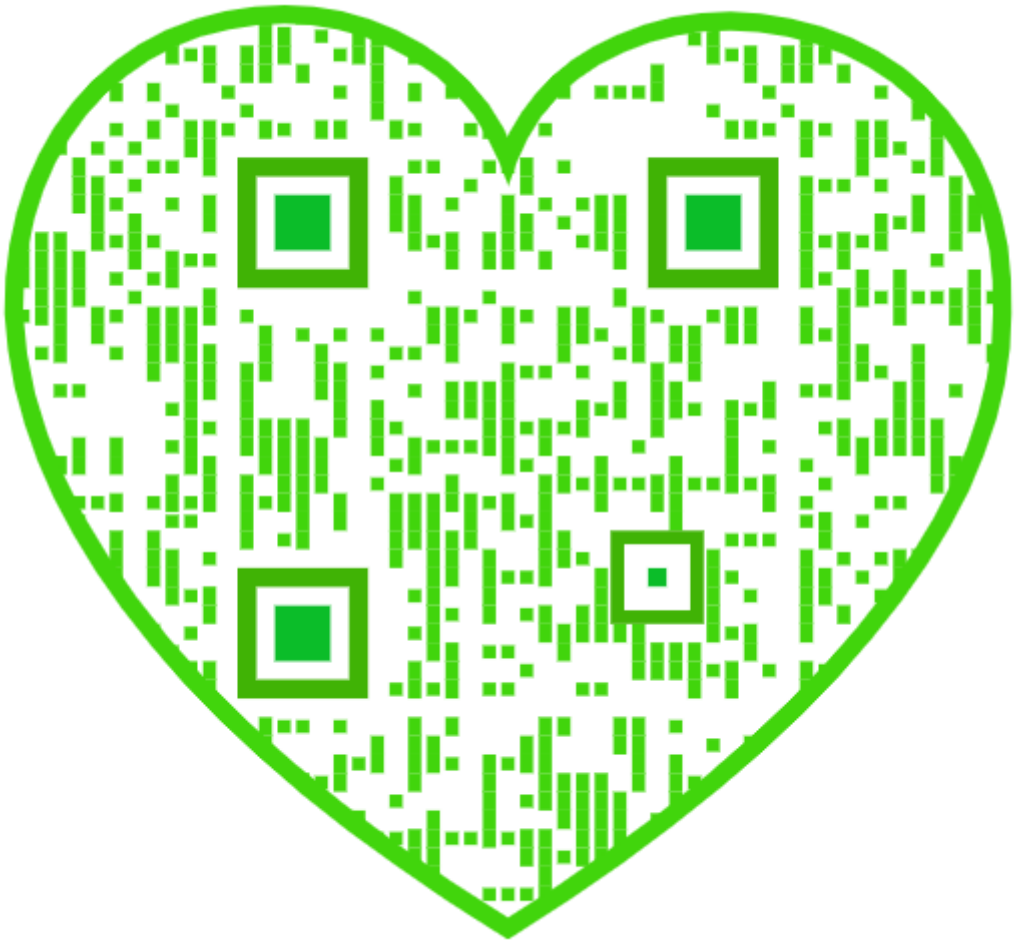

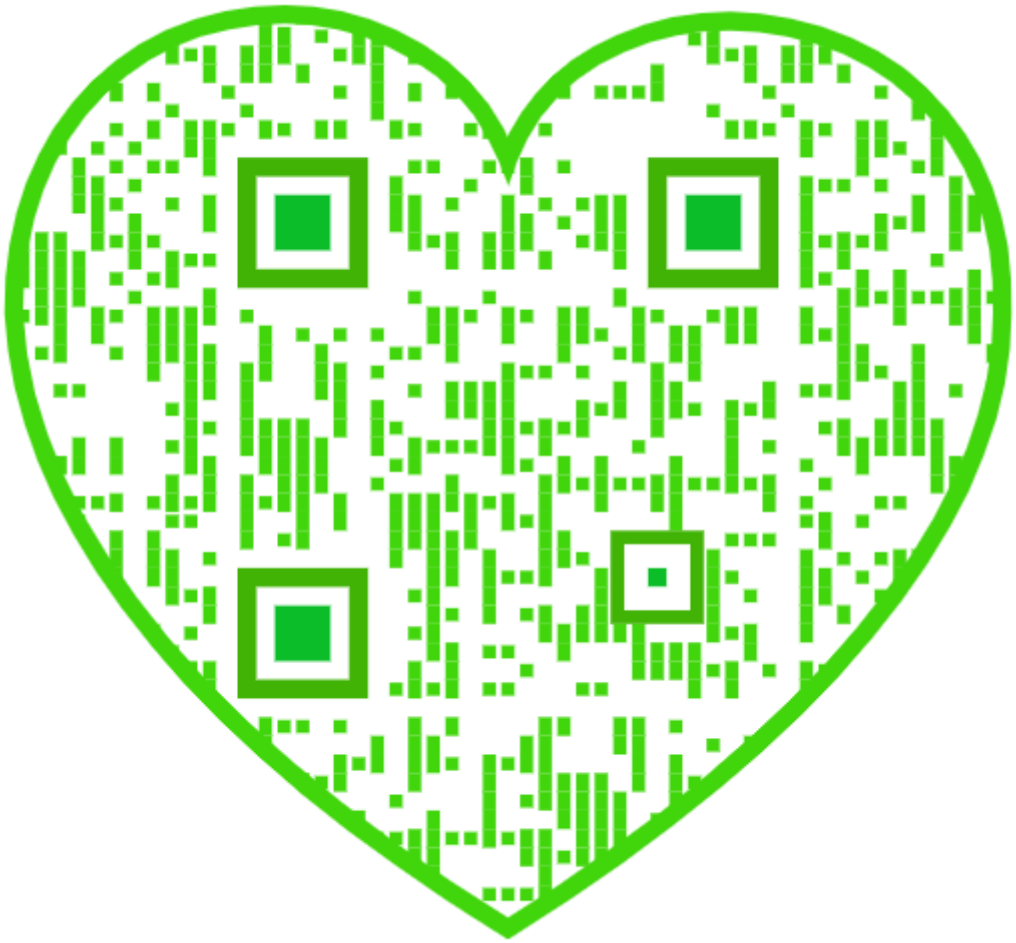

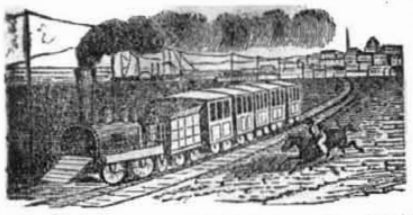

FROM EUROPE.

The American steamship Washington arrived at this port on Tuesday last, after a passage of sixteen days and a few hours. She had a stormy passage and the coal in her bunkers spontaneously caught fire, which caused much alarm for some time.

The financial affairs of England are in a dreadful state. The factories are working mostly on half time; thousands of mechanics are idle, and a number of large establishments have resolved to close their doors. Richard Cobden was denounced for his free trade measures and the greatest excitement prevailed in the manufacturing districts. A number of Banks have suspended payment in England. The Scottish Banks were maintaining their credit. Ireland was in a dreadful state. Assassinations and robberies were frequent.

A Nottingham stocking weaver had arrived in London and was working his loom in the thoroughfare. Fifty thousand operatives are out of employment in Lanarkshire.

The cholera was making great ravages in Russia.

The Vanguard and Minerva, two steamers plying between Glasgow and Dublin came into collision when at full speed, in the Clyde. No lives were lost owing to the calmness and intrepidity of the captains.

It is reported in the higher circles in England that a separation is about to take place between the Earl of Lincoln and his wife, a daughter of the Duke of Hamilton. There were some mysterious reports concerning this lady in the Paris papers of 1837.

Telegraph.

The work upon the line of Telegraph south of Petersburg, Va., its present terminus, is going on with great rapidity, and there is every prospect that it will be opened to Charleston, South Carolina, by the first of December.

Capt. John J. Reilly, is now near Chicago, superintending the line thence Eastward.—Messrs. Gholson and Shaffner are engaged in building the line between Louisville, Nashville, and New Orleans. The route from Chicago to Milwaukie and Detroit, forms part of the great O'Reilly contract, made with the assignees of Prof. Morse; and all these lines when in full operation, will serve to unite and cement still more closely the different States. The Lake Erie line, from Pittsburgh to Cleveland, and from Buffalo to Detroit, is going rapidly forward. The section from Pittsburgh to Cleveland is completed, and the great line from Cincinnati to St. Louis, is in a state of great forwardness.

The Salt Water Worm.

There is to be seen in the Quarter Master's Department at Washington, a specimen of the voracity of the salt-water worm. It is a piece of wood eaten so as to resemble a honeycomb—or rather it looked like a piece of a hornets nest. It was sent to Washington from the Brazos; and so piercing is the hard mouth of this little insect, and so active when it penetrates the fibre, that the wood was reduced to its present appearance in the course of thirty days It was not the part of a vessel, but a piece of the ways laid to bring articles to the shore. It is scarcely possible for a vessel to lay in those waters, if it be unsheathed with copper, without serious damage. One or two steamboats which were without copper bottoms, have sunk in those waters—all the others have been sheathed. The insect is said to be at first laid upon the timber in the form of a nit; and when it is hatched, it pierces the wood, making a very small hole, but as the worm increases in size in passing through, it eats a larger hole into it. When it has gone through a piece of timber, instead of penetrating through the opposite surface, it turns around and eats its way back.

A bridge 2,000 feet long is to be erected across the Illinois River at Peoria.

Progress of Odd-Fellowship.

The number of Lodges in the United States is 1,392: the initiations the last year, 32,794: the initiations the last year, 32,694; contributing members, 118,961; number relieved the last year, 16,764. who reeived $302,243,41; revenue of Lodges, $888,605 07.

It would do well to apply their surplus revenues to measures of a more benevolent nature, at least occupy a wider field as they well can, in dispensing their bounties. There is too much spent in trappings.

Grand Lodge, New York.

On Thursday the fourth, the New Constitution was adapted by a large vote. The Grand Lodge, adjourned on Friday. The District System will now go into effect.

Rail Road.

Gangs of Workmen commenced grading the road in Gardiner, Hallowell and Augusta, Maine, last week. The number of workmen are to be immediately increased to as large a number as possible. We understand it is the intention to prosecute the grading as fast as possible in these towns through the winter. The last section from North Yarmouth to the intersection with the P. S. and P. road, was put down under contract on the 14th inst.,

Chicago Mechanic's Fair.

The Fair of the Chicago Mechanics Institute closed on Saturday the 30th inst. A great number of ingenious articles were exhibited, speaking volumes for the Western Mechanics.

St. Johns Mechanic's Institute.

We are happy to perceive by the Albion of St. Johns, New Brunswick, that a great addition of valuable books has been made to the Mechanic's Library and among the regular periodicals, we notice the Glasgow Practical Engineer, an excellent magazine

Western Steamboats.

The number of steamboats, hulls and barges that arrived at St. Louis from the 29th of August to the 25th of September, was 252, the tonnage of which amounts to $41,229.

Iron Tunnel.

Mr. De La Haye, proposed some time ago to connect England with France by an iron tunnel across the Channel between Dover and Calais!

We perceive that public attention is again called to the subject both in England and France, but no steps will be taken to test the project until England's present financial crisis is over.

Coal.

The amount of coal forwarded to the Delaware and Hudson Canal Company, the present season, will not vary much from the enormous quantity of four hundred and seventy thousand tons.—*N. Y. Courier.*

Ten Hour System.

The operatives of Manayunk, Pa., have determined in public meetings, to memorialize the Legislature of that State for the ten hour system.

Hundreds of petitions are now in circulation in this State for the same purpose.

Albion, St. Johns, N. B.

Unless you can afford to give us credit occasionally for the original matter which you select from our columns we shall be induced to discontinue the exchange—"A word to the wise," etc.

Generating Steam.

Mr. Leonard's patent for the rapid production of steam, is simply fish oil thrown into the boiler. The saving of fuel is said to be thirty per cent. We doubt, however, the per centage.

Damages for Slander.

In the superior court of Connecticut, Joseph P. Jeffrey has recovered a verdict of $500 damages against W. M. Penberton for slander. They are skilful mechanics, residing in Waterbury, were jealous of each others reputation, and defendant's house having been set on fire, he charged plaintiff with the act.

When will mechanics learn wisdom and act unitedly for their own interests.

A Way Fact.

The money expended by Great Britain in seven wars, would have constructed fifteen railroads round the globe, allowing the cost to have been $25,000 per mile.

A Vacuum Truly.

A German gentleman advertises that he has at last solved the problem which the greatest chemists have hitherto thought impossible, viz: by discovering an ingredient by which the azote of the atmosphere can be totally destroyed, and thus producing a perfect vacuum—a new, cheap, and valuable motive power being obtained. For standing still we suppose.

Lighting the Wilderness.

Twenty-seven New England school-mistresses arrived at Cleveland, Ohio, on the 27th ult., consigned to the West, where they are going to scatter through the country and teach the district schools.

Volcanic Eruption.

The mountain Eagle states that great distress and alarm prevails among the inhabitants of Waller and Dale counties, Arkansas, produced by a burning volcano, which is said to have burst out from the high peaks of the Look Out Mountain, at a place called the "Narrows," on the 19th ult.

Russian Edict.

The Emperor of Russia has issued a decree ordering all the Jews in the empire either to become members of one of the guilds of commerce or burgessers of towns, or to become cultivators of the soil. Those who refuse to comply with these orders are to be subjected to all the measures of repression which the government may think proper to adopt.

Laborers Wanted.

Ten thousand laborers are wanted on the Pensylvania public works immediately, to repair the damage occasioned by the recent freshet.

Scarcity of Coal at Halifax.

Halifax papers state that the reduction of the duty on foreign coal has so increased the imports from Sydney and Pictou to the United States, that very little has been brought to that place, and they are fearful that before the winter is out it will have to be brought there from Boston.

Splendid Timepiece.

A clock worth $700 has been placed in the business room of the Custom House, Boston. It consists of an ionic iron column placed upon a stone pedestal. The column passes through the floor into the second story for about twelve feet, where are four faces looking each side of the room.

The Ice Trade.

From a table in the Boston Shipping List, I learn that for the month ending Oct. 31, 7106 tons of ice have been exported from this port, of which 1,363 tons went to Calcutta, and the remainder to the south and to the West Indies. The total exports of ice for five months, are 18,919,1-2 tons against 18,954,-3-4 tons last year.

Boston and Maine Railroad.

The receipts of the Boston and Maine Railroad, in the month of September, over the corresponding month of last year, is eighteen thousand dollars.

New Steamer.

The Fall river Steamboat Company are now building in this city another beautiful steamboat to run in connection with the Bay State. she is to be christened the "Empire State," the most appropriate name which could have been thought of.

American Gold Pens in England.

Among the files per Caledonia Steamer we notice an advertisement of Mr. Samuel Cave, Plymouth, England, in which he states that he has been appointed sole agent in that place, by Messrs. Crowin, Wheeler, & Co., of London, importers for the sale of the Genuine American Gold Pens superior to any in the world.

Mining.

One hundred and twenty-two companies have been formed for mining in Lake Superior mineral region.

A dreadful accident occurred on the Worcester Railroad on Saturday last. A car was thrown off the track and six passengers in it killed, their bodies being frightfully mangled. For their appearance to well loved homes shall watch many an anxious heart in vain.

Pinion Hinge and Blind Fastener.

A model of this invention which was exhibited at the late Fair in this City, and was so much admired, may be seen for a few days at this office.

R. Macfarlane delivered a lecture on the improvements in machinery, before Mechanics Mutual Protection, No. 38, last Monday evening at their room on the corner of Lispenard street and Broadway. A majority of the members of No. 19 came down from their room in a body to hear the lecture and listened to the speaker with profound attention. We like to see men who display a taste for useful information.

A splendid block of granite has been erected on the spot where Benjamin Franklin was born in Milk street, Boston. On it in enduring letters is the following inscription:

"The birth-place of Franklin."

How simple, how appropriate and grand, is this simple motto.

The Committee of the Washington Monument have addressed circulars to all the different associations of different orders to get up subscriptions for the building of the monument. We have no doubt that the request of the Committee will be heartily responded to.

The hydrocyanic acid is a perfectly colorless, limpid fluid, and cannot be distinguished by the eye from distilled water. It has a strong odor resembling that of peach blossoms, and when much diluted has the taste of bitter almonds.

Powers the sculptor, offers to furnish the state of Vermont with statues of Ethan Allen and Thomas Chittenden for the sum of twenty thousand dollars. They are to be placed in the capitol.

One of the finest specimens of needle-work exhibited at the Fair at Waterbury, was executed by Mrs. R. Johnson, a lady in her 74th year.

The Cotton Crop in the South, this season, is now set down at 2,200,000 bales, a higher figure than it was estimated a short time ago.

The Amherst Express states that a company with a capital of $300,000 has been organized to manufacture silk, cotton and woolen goods at South Hadley, Mass.

Never eat while you speak, as a man's throat is too narrow a channel for words to pass up and good meat to pass down at the same time.

The Emperor of Russia has ordered all persons, except those attached to the army, to shave off their beards. The owner of a house is responsible for the cropping of every beard under his roof.

A St. Petersburg letter states that the amount in value of corn exported from Russia since the last harvest is 32,891,622 roubles, equalling about 132,000,000f.

In the Sardinian States, there are 408 convents, which are said to have received from the Government, during the last 15 years, grants amounting to 100,000,000 francs (£4,-000,000.)

A church at Walsall England, was recently blown up by an explosion of gas which had escaped from the pipes. The whole interior was torn and defaced, and the beadle was killed.

A. M. Ledet, a Frenchman, ascended in a balloon on the 12th ult., in St. Petersburgh, and has not been heard of since. The balloon has been found on lake Ladoga.

Bronigart, the celebrated mineralogist died a short time since at his residence at the royal manufactory at Sevres.

Josiah Eaton, the aged pedestrian, has commenced another feat of walking 1000 miles in a thousand hours, in East Broadway, in this city. He is now 77 years of age.

Hiram Stacy, Esq., of Sangerville, Me. raised on his farm this season, pumpkins of an enormous size—one of which weighed 157 pounds.

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FOREIGN CORRESPONDENCE.

London, Oct. 9, 1847.
Waterloo Hotel, 69 Haymarket.

Dear Sci. Am.—

My last letter was addressed to you from Scotland, and during my short visit in that country I saw much that was new and interestiag to the scientific world. As agriculture has arrived at a high state of perfection in that country, it may be expected that all improvements in chemistry and all improvements relating to agriculture will receive much attention. This is truly the case, and so far as it relatest o machines propelled by horse and steam power, I think they surpass America, while the implements used in manual labour are far inferior to those of the United States.

There is a machine invented by a Mr. Ainstie for making tiles for drains (the farmers know the value of draining) which I saw worked by the labor of a man and a boy and it turned out pipe tiles very quick and of a good quality. Its cost was about $150. I have also seen a roller for crushing clods and rolling or compressing cultivated lands, invented by a Mr. Crosskill, who in consideration of its value received a special gold medal from the Royal Agricultural Society. Its action is said to arrest the ravages of the wire worm and the slug. It consists of a number of serrated wheels revolving on a separate axle and forming a roller two feet in diameter. Its cost stated to be about one hundred dollars. The miners in a number of places in Lanarkshire have been long out on a strike for higher prices. The factories in Glasgow are working on short time and there is much to affect the mind regarding the state and condition of the humble industrious poor during the coming winter. The philanthropy of the United States government is the universal theme of praise Commodore De Kay and his crew carried with him the warm wishes and grateful acknowledgements, especially of the simple and honest highlanders. A new process of bleaching and discharging woolen goods has lately been discovered in London by a French Chemist, residing there. I have seen some of the goods bleached, but the process is kept secret. Brikenhead is a new city springing up opposite Liverpool. A splendid tier of docks are in the course of erection.—The Washington took near fifteen days to make her last voyage to Southampton. I had some conversation with an excellent English engineer who confidently asserted that no alteration could make her a swift vessel, but more steam. The machinery he pronounced to be equal to that of any other steamship, but the build did not exactly suit him, although no fault could be found in the workmanship. It is needless for me to write regarding the present financial crisis in Great Britian. She will yet arise from it with wisdom learned in the school of affliction. The poor alas, those who have had no influence in bringing it about will be the greatest sufferers. Yet I verily believe that there is not so much blame attached to the merchants as some would lay to their charge. Providence blasted the crops and there was not a sale of manufactured goods to pay for the necessary importation of grain. This is the fountain of the evil. The remedy lies not in the capital of the merchants, that has evaporated, but there is plenty of plate in the coffers of those who have long had the benefit of the Corn Laws.

I will close this letter by saying that I had almost forgot to mention that I have lately seen a Threshing Machine invented by Mr. Ferguson of Paisley, worth about $100, which is just the same as some of the horse power threshers in America, although considered a new invention in Britian, and called the Peg Thresher. Yours Respectfully,

M. R.

Smuggling In High Life.

The London Standard of the 7th of October gives an account of an attempt by a noble Duke to smuggle brandy, cordials, and wines into Southampton. The articles were seized, part of them in the Duke's yacht, and the remainder in a chest in his palace. Another smuggler has been detected in the person of a lady of one of the colonial bishops who attempted to smuggle in a lot of foreign silks. She was detected, and the property seized:—but her ladyship was suffered to run.

Agricultural Chemistry.

Agricultural Chemistry teaches us that there are essential ingredients in soils, which it is of the highest importance we should understand. It is incontrovertable that the salts existing in soils constitute but a very small portion of the whole mass of the soil—that they are not to be deemed accidental, but entirely indispensable to plants, which according to their respective nature admit one or another into their circulation, and perishing for want of the appropriate salt. By salts we must understand all those substances which consists of a base united with an acid. The principal bases are Potassa, Soda, Lime, and Magnesia, which enter into the composition of all fertile soils. The acids with which these ordinarily combine are the Carbonic, the Sulphuric and Phosphoric. By burning plants, their combinations appear in ashes. An examination of the properties of their principal salts and their components, sheds a great light upon the subject. Let us begin with the bases. These are discovered to be metallic oxydes, the pure metals of which were obtained by Sir Humphrey Davy, and they are denominated respectively potassium, sodium, calcium, and magnesium and bone barytes, barium, &c. But potassium, which is the one most easily obtained, may be taken as a type of the class. It is a glittering metal, much like silver, but clear as water. It has some quality in common with sodium. When a current of water is passed over it, it is decomposed with great rapidity, devolving its oxygen. It often changes red color to blue. It combines with other acids, forming neutral salts, which are obtained by evaporation. The other alkaline metals follow the same process, but not so energetically as potassium. The proportions in which they combine are 50 parts potassium, 8 of oxygen; making 48 of potassa, 24 parts of sodium, with 8 of oxygen, making 32 of soda.

Knowing the great importance of this to a farmer to know what amount his soil contains of potash, or of soda, we present them distinctly. Take a portion of the soil, and put it into boiling water, and then strain it through a filter. The water will exact all the soluble portions—then dry by evaporation, and the salt remaining will show by its form, its solubility, and by the action of the air upon it when exposed, what base it contains. That base will generally be found combined with sulphuric acid. When sulphate of potash is present. it will be discovered by its slow solution and its permanency when exposed to the air. Some plants receive from the soil minute portions of alkali, while others absorb an immense quantity. Some plants, Montena for example, contain a considerable quantity of sulphurs, which combining with oxygen, developes the offensive gas sulphurated hydrogen, as is often found in fire arms when neglected, and with putrid eggs. To this is owing the nauseous smell of water in which vegetables may have been cooked. So with the water near the mouths of rivers, especially on the coast of Africa. The copper of ships anchored there rapidly decays, and this is the attributed cause of the unhealthiness of those shores. The best test of its presence is sugar of lead in solution, which in a short time shows itself producing a sulphuret of lead. Sulphuretted hydrogen is then unquestionably pernicious to animal life, but not to vegetables, for to some of them sulphur is necessary; it is essential in mustard, cabbages, and in a large class of plants.

Novel Witness.

The Trenton Gazette says a trial lately came off between two persons for debt. The person who brought the suit kept no books of account but was in the habit of marking his accounts upon the cellar door. He appeared before a squire in Morrisville, and the defendant demanded the evidence of the debt. The justice told him he must bring his book into court and prove it. He immediately procured a horse and wagon and set out for the cellar door, and actually brought it into court established his claim and got judgment. The lawyers were wonderfully puzzled in the cross-examination; the witness hinged altogether upon stubborn facts.

Vegetable Experiment.

By one of Liebig's experiments two hundred pounds weight of earth were taken and dried in an oven, and afterwards put into an earthen vessel. The earth was then moistened with rain water, and a willow tree weighing 5 pounds was placed therein. During the space of five years the earth was carefully watered with rain water, or pure water; the willow grew, and flourished, and, to prevent the earth from being mixed with fresh earth, or dust blown on it by the winds, it was covered with a metal plate, perforated with a great number of small holes, suitable for the free admission of air only. After growing in the air for five years, the tree was removed, and found to weigh 169 pounds and about 3 ounces; the leaves which fell from the tree every autumn were not included in this weight The earth was then removed from the vessel, again dried in the oven, and afterwards weighed; it was discovered to have lost only about 2 ounces of its original weight; thus 160 lbs. of woody fibre bark or roots were certainly produced, but from what source? The air has been discovered to be the source of the solid element at least. This statement may at first appear incredible, but on slight reflection its truth is proved, because the atmosphere contains carbonic acid, and is a compound of 714 parts, by weight of oxygen, and 388 parts, by weight of carbon.

Improved Tug-Boat.

The New England Farmer says:—We have been much pleased with witnessing the performance of a small boat, built by Henry M. Paine of this town, of a model of a tow boat to be used on canals The wheel is placed in the centre of the boat under the bottom, so that no wave is caused upon the surface of the water by its operation. The form of the boat, is such, also that a much less wave is caused by its passage through the water, than in those of the common construction, so that the objection to tow-boats, that they wash the banks of the canals is obviated. We do not know, whether any injury would be likely to arise from the operation of the wheel so near the bottom of the canal If there should not, we see no objection to the boat, and should suppose it would prove a useful invention."

We have seen no less than five steamboats built with a single wheel in the centre of the boat. One of this description made a number of passages on the Erie Canal in 1844. We cannot see why a boat like Mr. Paine's should not be successful if well and properly constructed. The passage boats on some of the English Canals used to run at the rate of eight and ten miles per hour, railroads, however, have destroyed this mode of travelling.—Ed.

Extraordinary Tree.

We regret to state that during a late heavy storm a portion of the famed lime tree at Nestadt, Wirtemburg, was blown down by the wind which prevailed. This tree, which was planted more than 500 years ago, is thirty-six feet in circumference at the base, and the twelve main branches of this gigantic trunk were as thick as oak trees, being more than six feet in circumference. These twelve branches thickly covered with foliage, formed a circumference of 450 feet and rested upon 115 props, which, since the year 1554, were for the most part, set up by noblemen, bishops and other persons of distinction. The trunk of this once majestic tree is now standing, a mournful wreck of its ancient beauty.

Horse Rake.

It is well, says a correspondent of the Albany cultivator, to preserve the momento of implements useful to the farmer, and as the farmers of America have profited very largely by the advantages derived from the horse-rake, I deem it but justice to the inventor, (a poor son of Africa,) to treasure up its history.

A black man, who lived at Hempstead Plains, Long Island, says the Farmer's Cabinet, invented the horse rake. He died in 1821. It was first introduced into Pennsylania in 1812, The first one was destroyed by a malicious person, who feared its innovating effects on the price of labor. It is now becoming universal, and many a patent instrument is to be found while the inventor is forgotten. It saves at least one half of the expense of gathering hay.

A Keen Reply.

John Wesley in a considerable party, had been maintaining with great earnestness the doctrine *Vox Populi, Vox Dei*, against his sister whose talents were not unworthy of the family to which she belonged. At last, the preacher to pnt an end to the controversy, put his argument in the shape of a dictum, and said:—"I tell you sister, the voice of the people is the voice of God." "Yes," she replied mildly, "it cried, crucify him, crucify him!" A more admirable answer perhaps was never given.

Striking Signs.

Wait and Ketchum is the very appropriate name of a firm in this city, which makes patent medicines on a large scale.

Call and Settle have a tailoring establishment in Meadville, Tenn. We presume they give short credits.

Neal and Pray is a business firm at Portland, Me. It is superfluous to add that they belong to orthodox churches.

Luke Sharpe is in the retail business at Cincinnati. As might be expected from the name, he is always wide awake whenever money is to be made.

High Treason Extraordinary.

Archibald Cornuel, a sheriff's officer, was executed at Edinburg, in the reign of James 1, of England, for hanging two pictures of the king and queen, which he had seized under a distress for rent, to the gallows, the then usual place for sales by auction.

All for Love.

The strongest case of love and devotion of which we recollect to have heard, says an exchange, is that of a Kentucky gallant, who got into a hollow tree, where he lived a whole week, peeping through a knot hole at his true love, as she sat a sewing bearskins into petticoats, at her window.

Railroad Riding.

The cockney Dorothy Ramsbutton, writes, "We mean to go by rale-rode, which is the only way of travelling now; if it was not for not being able to stop when you want to and the being locked in, and the smoke of the flinges, and the smell of the smoke from the chimbly, and the rattlin, and the not being able to see nothing of the country, hand the danger of being blowed up or knocked off the rales, I do think hit would be complete.

Scotch Kirk Festivity.

Some look upon the presbyter as being a gloomy fellow, but such is a sad mistake, as appears by a soiree lately held in a Congregation church in Glasgow. The exercises were: A prayer and psalm, a speech from the chair, the comic songs of "There lives a young lassie," and "A man's a man for a' that," a psalm, some fruit and tarts, and the comic song of "Roy's wife." Innocent amusement blended with gravity is the characteristic of Saunders.

Rather Laconic.

A friend received a letter, in which the news was asked simply by the interrogation point. thus, '?' The reply was equally laconic it being thus '0.'

"Is Jonathan Dumpy here?" asked a raw country fellow, bolting into a city printing office.

"I don't know any such man!" replied the foreman.

You don't know him!" exclaimed the country chap; "why he courted my sister?"

Laziness grows on people: it begins in cobwebs, and ends in iron chains. The more business a man has, the more he is able to do.

Dr. Beecher says:—Never chase a lie. Let it alone, and it will run itself to death. I can work out a good character much faster than any one can lie me out of it

Verily this is a great country but not fenced in and never will be. Jonathan's boots can navigate the Pacific Ocean, as well as the Misissippi River.

The pork population of Ohio is estimated at two million

One of the drop curtains of the Broadway Theatre cost $1600. It is of silk damask.

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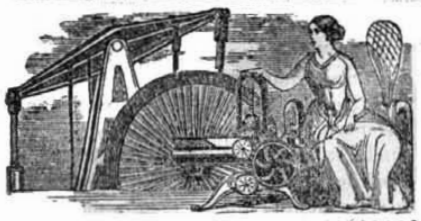


New Inventions.

Valuable Discovery.

Messss. Quarterman & Son, of No 18 Burling slip, this city, have made a valuable discovery in the mode of mixing paints, for which they have applied for letters patent. All artists' colors can be prepared in the composition, will keep moist for years and will mix either in turpentine, oil, or water. All paints prepared in this manner preserve their brilliancy much longer and are more durable than those prepared in the old way. This new mode is also applicable to paints used in house and ship painting. It is also so cheap and so simple in its application, that any painter or manufacturer can adopt it readily.

New Threshing and Cleaning Machine.

Mr. N. B. Lucas, of Jefferson county, Illinois, has invented a new Threshing and Winnowing machine, which can thresh and clean with ease 600 bushels of oats in a day, and about 500 of wheat. It threshes damp grain well separating the damp grain from the straw easily. The inventor says that there is no machinery that winds with damp straw ; no elevators to choke ; no hand required to pitch straw from the machine, as the machinery throws it in a pile, to be taken with a horse rake, and thereby saves the labor of a man.

Box Turning Machine.

Mr. N. O. Mitchell, of Gardiner, Maine, has made some valuable improvements in machines for making small wooden boxes. By a late improvement both the lid and box are turned out on the one frame. The slide which feeds the cutter operates nearly in the same manner as Groom's Bolt machine, but the other combinations are all entirely different. The cutter for turning the box is made all in one piece and it cuts the tenon and turns the box at the same time. It is an ingenious machine and the inventor has taken measures to secure a patent.

Railway Carri age Brakes.

Mr. Crawford, an English engineer proposes to apply to any number of carriages brakes in connection, and set them altogether in motion by a mechanical force on the last carriage in the train. The important feature in the invention is, that the engine drive or the guard may in a moment work the brakes as they see occasion. By means of springs, similar in construction to common buffer-springs, the retarding force is distributed equally on every wheel of every carriage, with the utmost degree of nicety; and besides the combined action dependent upon the force employed, the brakes of each separate carriage can be used as in the present system. So valuable a substitute for the existing deficient plan, would seem to deserve consideration, and we learn by the American Railroad Journal of October 30th, that a gentleman in Philadelphia is perfecting a model to accomplish this object.

New Method of Making Steel.

A process has been invented by a Mr. Lucas, for converting edge tools, nails, &c , made of cast iron, into good steel. It consists in stratifying the cast articles, in cylindrical metallic vessels, with native oxide of iron, and then snbmitting the whole to a regular heat, in a furnace built for the purpose.

Yes it will do for edge tools such as chisels and axes, but there is a shorter process still, known to every mechanic, to keep those tools as they are only in good edge.

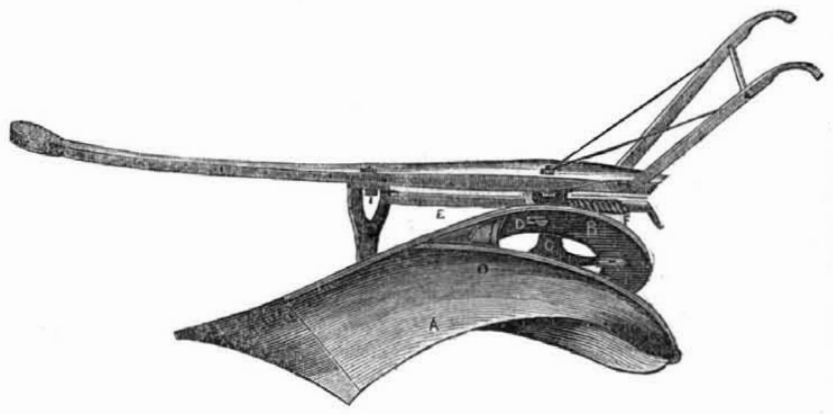
Wonderful Telegraph Improvement.

The *London Ma gazine of Science* for last month states that the Electric Company have invented a machine which will communicate intelligence simultaneously to some forty or fifty British cities—among them Liverpool, Glasgow, Manchester, Bristol, Leeds, Sheffield, Nottingham, Hull, and York. It can transmit *at once* to all these places, from one thousand to two thousand letters per minute

New Cab.

By our late exchange, we perceive that the Londoners have got into full operation the C ab described by our foreign correspondent a few months ago. which would be serviceable here in detecting frauds of cabmen Each vehicle is fitted with the patent geometer, having a dial plate inside the carriage, by which a passenger can easily ascertain the distance he has travelled. The index is worked by the near hind wheel, and the apparatus which is extremely simple, and not likely to get out of order, occupies very little room, and but for the dial-plate would scarcely be perceived.

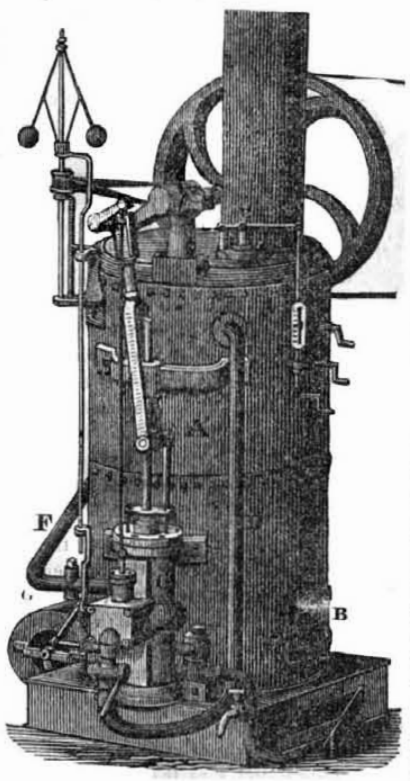
IRAM BREWSTER'S REVERSING PLOUGH.



At the late Fair of the American Institute there was a great variety of common ploughs. Some were undoubtedly most excellent, although little novelty could be discovered in their construction ; in short, something new and useful, what we always look for, was not to be discovered except in the above plough of Mr. Brewster. Of the three reversing exhibited, both for beauty and ease in the management, the claims of this plough could not be disputed. Its purpose is to save principally long turnings in headlands, and for ploughing on level and even fields, both operative requisites are embraced in the combination. In looking upon this plough, you could not tell without examination, that it was in any thing different from any other, but we have placed it here in perspective, and the following description will explain its construction and operation.

A, is the mould board ; B, is the landside plate attached to the mould board by screw bolts and two circular braces, one of which is seen near D. C, is the beam standard, which unites the beam with the mould board by two pivots working in sockets in each end of the landside plate—the shaft of the pivots will be observed near C, working in one of the sockets. F, is a spiral spring working through the centre of one of the standard braces, and fastened to the other. On the shaft E, of this spring is a clutch which unites the beam with the top of the landside through a small opening D When the clutch is united to the mould board, as it is now represented, the plough is in gear, but if the mould board is wanted to be ungeared from the left hand side of the plough, all that has to be done is to press the spiral spring with the foot, the clutch is thrown out of D, and on the pivots, the mould board will revolve and can with great ease be attached to the right hand side of the beam by a jerk, when the clutch catches and gears the beam with the top of the landside. We are aware that a revolving plough is not a new invention, but as the mould board is cast hollow and the point cast hollow and alike on both sides, it is the easiest managed of any plough of the kind that is known ; and it is a new and superior invention, compared with any other in the matter of gearing. For hilly districts it is a very superior agricultural implement, and the inventor, Mr. Iram Brewster, of Stamford, Delaware county, N. Y. has made application for letters patent for some of the combinations. An operating model performs work well, and with a little alteration in the proportions, it will perform work equal to any plough in the country.

Mann's Steam Boiler.



It is well known that steam power would be more generally used in light mechanical business if it could be made available in the small shops and manufacturing establishments which pervade our cities in such infinite varieties. To meet this necessity an Engine and Boiler are here combined in such a manner as to make it of the greatest utility. A two horse power Engine and Boiler are contained in a space ordinarily appropriated to a stove.—They are attended with no risk from fire, can be managed by any person of ordinary capacity, and can conveniently be introduced into the Merchant's Wareroom, the Mechanic's Shop, and into the upper lofts of buildings.

This engine is just what is wanted for driving small mills of every description and would be excellent for working a printing press. It is very economical in the consumption of fuel ; an engine of two horse power using only about 200 lbs. of coal per day.—The space occupied is three feet square for an engine of three horse power, which stands on the floor on a cast iron base or ash box, as seen in the engraving. These engines can be built on this plan as high as twelve horse power ; the boiler being so constructed as to generate steam rapidly, requiring but little fuel and small boilers.

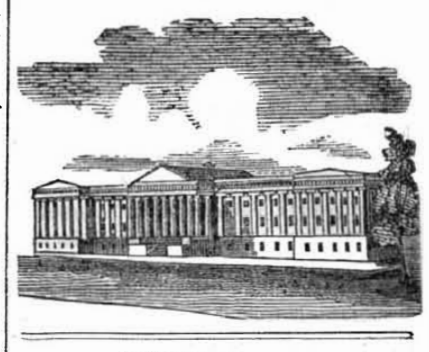
A, in the engraving, is the boiler ; B, door to the furnace ; C, cylinder ; D, smoke pipe ; E, safety valve ; F, exhaust pipe ; G, the blower.

These compact, portable and cheap engines are manufactured by Charles F. Mann, No. 17 North Third street, Troy, N. Y., and orders will be received, post paid, at this office.—The price for a two horse power is $350, and $100 for every additional horse power.

Electric Engine.

Dr. Colton has been lecturing before very interesting audiences in Louisville, Kentucky, and has been exhibiting a very beautiful work-model of H. N. Henderson's Electric engine The inventor, it is stated, has made application for a patent.

A process has been patented by which artificial stone of every quality may be produced, from granite to statuary marble.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending Nov. 6, 1847.

To William Boardman, jr., of New York, for improvement in portable Steam Pump.—Patented Nov. 6, 1847.

To William Younger, of Huntington, Tennessee, for improvement in Washing Machines. Patented Nov. 6, 1847.

To Richard Hemming, of Boston, Mass., for improvement in Couplings for Cars. Patented Nov. 6, 1847.

To Joseph Hale of Otisfield, Maine, for improvement in Washing Machines. Patented Nov. 6, 1847.

To William Crentzfeldt, of Washington, D. C., for improvement in Chimney Caps. Patented Nov. 6, 1847.

To Thomas W. Allen and Charles W. Noyes of Greenbush, New York, for improvement in Stuffing Boxes. Patented Nov. 6, 1847.

To Pardon T. Wightman and Horace Vaughn of East Greenwich, R. I., for improvement in machinery for Drilling Rocks. Patented Nov. 6, 1847.

To S. L. Chase, of Lockport, New York, for improvement in Combination Locks and Keys. Patented Nov. 6, 1847.

To Frederick Harback, of Pittsfield, Mass., for improvements in Car Wheels, (2 patents.) Patented Nov. 6, 1847.

To Joseph B. Wilson, of Malden, Mass., for improvement in Ice Cutters. Patented Nov. 6, 1847.

To William Harrison Babbit, of Greene Co. Penn., for improvement in Hill-side Ploughs. Patented Nov. 6, 1847.

INVENTOR'S CLAIMS.

Boot Patterns.

Simon C. Shive, of Bloomtownship, Penn., for improvement in Boot Patterns. Patented August 14, 1847. Claim.—What I claim as new and desire to secure by letters patent, is the adjustable character of the patterns in one operation, or in other words, the simultaneous and proportioned extension of the several parts composing them, arranged in the manner and for the purpose set forth.

Drying Grain.

James R. Stafford, of Cleveland, Ohio, for improvement in apparatus for drying corn, grain, flour, &c. Patented August 14, 1847.—Claim.—What I claim as my invention and desire to secure by letters patent, is the method of drying or cooling grain, flour, meal, or other substances on the external surface of a hollow cylinder, armed with flanches or other devices, arranged and operating substantially as described and combined with a trough.—The cylinder to be filled with hot air or steam, when used for drying, and with cold air when used for coooling purposes.

Cooking Apparatus.

Bernard Antognini, of New Orleans, for improvement in Cooking Apparatus. Patented August 14, 1847. Claim.—What I claim as my invention and desire to secure by letters patent, are the following parts: 1st—the division of the cover or upper surface of my furnace into several parts, each of these parts heating one furnace. 2d—the use of partitions which isolate each furnace, and in combination therewith the use of the little door of each furnace, which partitions and doors govern the fire as required, thereby presenting all the advantages of the chimney or of the smoke apparatus without the nuisance, owing to the use of charcoal.

Watches.

Mr. Summersgil of Preston England, so arranges the works of lever watches as that they require winding up only once in eight days.

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NEW YORK, NOVEMBER 13, 1847.

Southern Manufactories.

There is at this moment an energy in the investment of capital for manufacturing purposes in the Southern States, which will soon place the South in a position perfectly independent of the Northern States, or Europe, for the supply at least of the coarse and medium style of cotton goods. Factories are springing up in every Southern State. In Charleston, the city of Southern dignity and high born manners, we perceive that a factory is now in progress of erection which will contain three thousand spindles and one hundred looms; and from the quality of cloth intended to be manufactured it will turn out about twenty-five thousand yards per week. The machinery is to be driven by steam power, and it will pay well if the whole be properly managed This is the first enterprise of the kind undertaken in Charleston, and surely there is no less dignity in following mercantile pursuits honorably, than agricultural. The South will shortly make all her own cotton cloth, and we may yet see the time when the cotton shall only leave the plantation in the form of cloth. The cotton cloth for the Northern States and for mercantile exchange with other nations, will always be made in the Northern States, but we may without any prophetic claims advise our Northern manufacturers to look more to investments in woolen manufactures, and certainly we strenuously advise them to make investments in the manufacture of linen cloth. There is just now a boundless field for the growth of flax and the manufacture af all kinds of canvass.

From different sources we have accounts of the great activity in the erection of cotton factories in old Virginia, Georgia and Alabama, and we perceive by the Franklin, La., Banner that good machinists, blacksmiths, coopers, and mechanics of every description are wanted to come and settle there.

We will call attention to this subject again.

Mechanics' Institutes.

No institutions are more needed at the present moment in our country, than associations of practical mechanics, having the distinct objects in view, "mutual benefit and mental improvement." The good that might be accomplished by institutions of this kind, need not be a matter of speculation. None will deny that good can be done, although the best means to accomplish this, may be looked upon by different persons in different ways. Yet, "when there's a will there's a way," and if our mechanics were really desirous of improving themselves, so that they might generally be an honor to their several crafts and country, the universal opinion (and too well grounded,) regarding the repugnance of our working men to solid studies, would soon be something obsolete. It is a fact, however, and all sensible and good mechanics regret it, yea even those who seek not to be any better regret it, that there is not that general intelligence among our mechanics which there ought to be. It is true that there are stars among them, none better, none brighter, but there ought to be more, and there will be more if they take our advice. In every village let there be a Mechanics' Mutual instituted, and instituted for no ideas of farcical exhibition but for the object of mutual benefit and mental improvement. Let there be two nights in the month for admitting members and let the other two evenings be devoted to scientific and useful discussion and the reading of short papers by the members, upon different subjects. If a member has invented some machine, or made some improvements, or discoveries about which there are some doubts in his mind, let him bring the subject before the association and the merits and demerits of the invention be discussed, and if it is only in a state of progression, some new light may be thrown upon it and the subject kept sacred and faithfully for the inventor's benefit until it is perfected and application made for a patent. Can any one, will any one, limit the amount of good that would be accomplished if such a mode of procedure was adopted by our mechanics. Let those mechanics Associations that are now in existence pursue this course if they would benefit themselves, and above all things let each association get a *sinking fund established* upon sound principles, There is nothing like a fund to give strength and confidence to new members and persons desirous to become such. A fund is an an anchor sure and stedfast. We must say and say it with sorrow, that there appears to be but little desire among our mechanics generally for mental improvement. It is our duty, however, to preach the true doctrine and we are doing so as if conversing with them. A Literary Institute was established by a few mechanics in this city about three months ago It was commenced with the promise of a great number of members, yet as in a number of cases of the same kind which have come to our knowledge, promises were but promises. A few, however, have met and have profited by association. Their spirit we are happy to hear has awakened a sincere desire among the various Protections to cultivate the mind. Short lectures and Debating Societies have been engrafted into the exercises and no doubt much good will be accomplished. Let them discuss only those subjects, that will profit and leave vain questions to the moles and bats.

We call upon all our young mechanics, and old mechanics too, who belong to Mechanics' Associations to prepare for next winter's campaign and prepare yourselves to be the speakers. Don't let mere talking men be always your leaders in the paths of knowledge, especially when there are so many men of good sense and profound understanding among yourselves. "We speak as unto wise men, hear ye what we say."

Important Patent Cases.

A patent case has recently been decided in Washington, by Chief Justice Cranch, of large importance to the shipping interests. A very valuable portable Steam Pump was invented in New York, in 1841, which was quickly discovered to be superior to any other to relieve stranded vessels. But a legal difficulty arose as to who was its original inventor, which has greatly embarrassed the board of underwriters. That difficulty has been at length removed. The contestants were William Boardman, jr. and William Atkinson. Z. C. Robins Esq. in behalf of Mr. Boardman, and C. M. Keller, Esq. for Mr Atkinson, applied to the Patent office for a patent. After a long and most elaborate litigation before that office, Mr Robins succeeded in obtaining a decision from the Commissioner in favor of his client. Mr. Keller, not satisfied with this decision, took an appeal to the Courts; but after another hard fought battle, says the National Intelligencer, Mr. Robbins has, with great skill and address, succeeded in establishing the priority of the invention of Mr. Boardman to the satisfaction of the the Courts, as well as the Commissioner, and has obtained a verdict accordingly. The invention is exceedingly important to the whole shipping interest, not only of this country, but of the world. For with these portable steam pumps leaking vessels may be relieved in an incredibly short space of time. Hence it is not to be wondered at that the case was so severely contested. The New York Board of Underwriters already have four of these steam pumps in their service, a fact which may be deemed conclusive upon the question of their utility. The patent has issued to Mr. Boardman from the Patent Office

Booth vs. Garelly.

Before the U. S. Circuit Court in this city, on Tuesday last, a verdict of two hundred dollars damages was rendered to Don Alonzo Booth against Mr. Garelly. The complaint was for an infringement of patent for figured silk buttons.

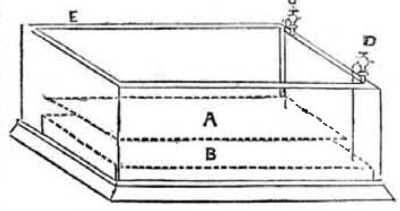
Another Patent Suit.

An interesting case was decided in the U. S. Circuit Court in Philadelphia, on Monday last. The suit was brought by A. K. Carter of Newark, N. J., an agent of Blanchard's Gun Factory for infringement of patent. The machine was originally applied to cutting shoelasts, oars, spokes, gun stocks, &c., but it has as all know, been applied to the cutting of marble busts with the utmost fidelity. Two of these were produced on the trial, the busts of Mr. Clay and Mr. Webster, which were made by the agency of steam and the use of the common turning lathe. Mr. Thomas Blanchard, the inventor of this machine, an engraving of which we gave in Vol. 2, No. 30, Scientific American—is a native of the old Bay State, and patented it 37 years ago. In 1834 the patent was renewed for 14 years by a special act of Congress in consideration of its great merit. Mr Blanchard in the present cases, for there were two of them, recovered verdicts of $2194, merely as damages.

Electrotype and Electro-Gilding.

NO. VI.

We have already given examples of different apparatus used for electrotyping medals, in other words electrotyping on a small scale, buf it is necessary in electrotyping large plates to use a box or apparatus different from any yet represented and especially for large casts and those in deep relief. This is called a flat trough and represented in the annexed engraving. Without this for large plates it is impossible to have a uniform thickness in the deposit. A large trough of this kind is generally made of wood well varnished inside, with pitch and rosin.



E, is the trough; A, is the mould attached to the copper wire C, which is connected with the zinc of the constant cell battery. B, is the feed or copper plate connected with the negative wire D, of a constant battery. The mechanical arrangement is to keep the mould sunk and also the copper plate which must be taken, out and cleaned once or twice every day to prevent impure deposits. Professor Jacobi, to hasten the deposit recommends that fine copper filings be occasionally sifted gently upon the electrotype. Many in reading over these experiments and instructions in Electrotyping may be disposed from a first experiment to question their accuracy, unless having better fortune than many chemical amateurs, should have splendid success in the first experiment, but let not a few failures deter the amateur in Electrotyping from progressing. Success will attend persevering effort and the eye will soon learn to take things in the nick of time and the hand manage with the required dexterity, which practice alone can give. In the management of moulds care must always be taken to immerse the mould last, or else there will be a chemical action and a dingy dark deposite. The beauty of crystals depends much in chemistry on the form of the first crystal, and with the precaution of immersing the mould last, there will soon be a deposite of copper over the whole surface, after which there are but little fears of oxide. On plumbagoed moulds the deposit is not so instantaneous as upon those of copper, for the operation is step by step from particle to particle, commencing near the wire, and spreading gradually over the whole surface. Very often there are dark deposites upon the plumbago mould especially arising from too large a battery to the size of the mould or vice versa, practice will soon find out the exact remedy and as we desire to see experiments commenced by all who can, we say practice will provide all the remedies.

The separation from wax moulds is done by laying the medal on its face on the table and after pressing the slight overlapped edge of copper with a fine brad awl in different parts around the medal, they will then be easily pulled apart.

U. S. Armory.

The expenditure at the Springfield U. S. Armory for the manufacture of arms and machinery, for the year ending June 20th, 1847, was $172,537,05.

Turpentine.

The manufacture of turpentine is at this time attracting a good deal of attention in the southern portions of Alabama and Mississippi. We stated some time since that Florida had engaged somewhat largely in the manufacture of it, and that several parcels of it had been shipped from Jacksonville, in that state. A turpentine distillery has been established at Napoleon, Miss, and the Alabama Planter says that sufficient trials have been made to prove that the pine forests in that state yield turpentine as abundantly as those of North Carolina, and the essays made to distil it have given sufficient encouragement to induce large investments in the business, and it adds that a number of individuals both there and on the Mississippi coast, are preparing to enter into it immediately.

Cotton Seed.

A firm in Vicksburg, Miss., offers for sale an article of cotton seed, for which it asks planters to pay the moderate sum of ten cents per seed! To convince them that it is a bargain at that, the advertisement announces that Judge Noland has examined it, and after examination, has given two hundred and fifty dollars for one fourth of a bushel. It tells also that another person has bought five hundred seed and paid fifty dollars for them.

Indian Annuites.

We have been informed that the bids for annuity goods, for Indians, were opened yesterday at the Indian Department, and the contracts awarded to the following gentlemen, they being the lowest bidders: Messrs. Grant & Barton, of New York, blankets and dry goods, deliverable at New York, and St. Louis Mo. Simeon P. Smith, of New York, hardware, agricultural implements and axes. deliverable in New York. Wm. N. Clem, of Brooklyn, New York, hardware deliverable in St. Louis, Mo. Edward R. Tryon, of Philadelphia, northwest guns deliverable in Philadelphia.—*Washington Union Nov.* 2

New Copyright Movement.

An article contributed to Blackwood by an American, has been copy-righted here, which was to prevent Scott & Co., from r printing that magazine, or at least that article. It seems to us rather a shrewd trick.

Mortising Machine.

In describing this machine in last week's Scientific American, we made a mistake in saying that Thomas Chandler, was proprietor of it for this city, Brooklyn, and Essex Co., N. J. Thomas Thatcher is the proprietor, office No. 153 Greenwich street, this city.

Notice to Navigators of the Upper Lakes.

A sand bar has been formed across the channel at the entrance of Ashtabula and Conneaut harbors. No vessel should attempt to enter either of these harbors drawing over six feet water.—They should only be approached during calm weather. The best water is near the east piers, and nearly parallel with the outer end of them.

Scientific American—Bound Volumes.

The second volume of the Scientific American, bound in a superb manner, containing 416 pages choice reading matter, a list of all the patents granted at the United States Patent Office during the year, and illustrated with over 300 beautiful descriptive engravings of new and improved machines, for sale at this office—Price $2,75. The volume may also be had in sheets, in suitable form for mailing—at $2.

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A Glance at the Heavens.

(Continued from our last.)

The stars which do not belong to our solar system are frequently termed *fixed*, but the nice observations of late times have shown the inappropriateness of any such language applied to matter. Nearly three thousand groups of two or more stars have been discovered, which revolve round each other or about a common centre of gravity, and the times of revolution have in many instances been calculated, the shortest period being fourteen years, whilst there are some of several thousands. To the naked eye, these stars seem to be one, and it is to the telescope alone we are indebted for a knowledge of their true nature. There are systems of three stars, and a group of four has been found which does not complete the circuit of its revolution in less than 100,000 years!

It is a natural inquiry, what is the relation of ourselves, that is, of our sun and its system to those far distant bodies—is it a fixed, or is it a changing one? The answer to this inquiry has been much debated, but of late it has been assumed that our system is in a state of motion, and that we are drifting at a very rapid state towards a point which is now covered with the constellation Hercules. This motion is called by astronomers the translation of the sun in space. What the object that attracts us, ond whether we are travelling, in a regular orbit, are both unknown. How mighty must be the moving power to produce an effect so magnificent. If all the motion which is found to exist upon close observation, of a star in the Swan constellation, is properly attributed to ourselves, and none to that star, then it seems that we are darting through space three times as quickly as she travels in her orbit, and that we shall reach that place where the stars appear to be of the sixth magnitude (the dimmest star visible to the naked eye) in 500,000 years; and now, one word as to the instruments by which the wonders, we have rapidly noticed, may be seen.

We have already stated that the Telescope lately constructed by Lord Rosse contains a lens the diameter of which is six feet. These who know nothing of the construction of Telescopes cannot conceive the labor required to perfect one on such a principle as this. It is not merely the magnifying power of an optical instrument which constitutes the usefulness, for some telescopes are much superior to others in what is termed the power of penetrating into space, though inferior to them in magnifying power. Herschel computed that his seven feet reflector reached 20 1-4 times further into space than the unassisted eye; and his great forty feet instrument penetrated 192 times beyond the farthest point visible to the eye. The power of Lord Rosse's new instrument is stated to be 500; that is, a star, which is six thousand times deeper than one of the first magnitude, becomes an object of vision. The light of such a star would occupy 60,000 years in its transmission, and therefore the ray which passes down the tube today, and enters the eye of an observer, left the shining sphere so many years ago. To use the language of Humboldt "it is the voice of the past that reaches us." It has been well said that with our mighty telescopes we penetrated at once into space and into time. We measure the former by the latter and the latter by the former Much may have long disappeared, much may have been otherwise arranged, before it becomes visible to us. The aspect of the starry heavens presents us with evidences of diversity in point of time, and diminish as we will, the millions or even thousands of years which serve us as measures for the distance of the unresolvable nebula with their soft lustre and of the resolvable nebula with their twilight gleamings, bring them as close to us as we may, it still remains more than probable from the knowlege we have of the velocity of light, that the light of the remote celestial bodies affords the oldest sensible evidence of existence of matter."

In order to ensure steadiness and easiness of motion to his telescope, Lord Rosse has placed it between two massive parallel walls, and thus its range of vision is very limited. When he has sufficiently examined that portion of the sky, which it now commands an alteration in its position will be made, and thus in time a survey of that portion of the heavens which can be observed here, will be made. Many years must elapse before a body of observations can be brought together for philosophical speculation, but what it has already revealed to us is highly valuable.—*Glasgow Practical Engineer.*

Factory Children in China.

Outside of the Western gate of the city, (of Canton.) in the ward of Chang hing, in a weaver's establishment of the firm of Yun sang, are living a family of six or seven individuals consisting of husband and wife, children and daughters-in-law, who ordinarily gain their livelihood by weaving, and the inhabitants perceived they went in and came out with an air af cunning and secresy calculated to excite suspicion, but as yet nothing was betrayed or known of the bad state of things there. On the 3rd moon, 28th day, (12th May,) suddenly a crying was heard in the house, and a voice of one begging for life, when many people entered. and saw the husband and wife beating an apprentice with the intention of killing him The people at once rescued him and made minute inquiries of him concerning the matter. He said, there were at the time ten other boys in the manufactory, all of whom had been kidnapped and compelled to work there, and during the winter were only provided with two single garments, and in the summer had neither jacket nor trowsers; and every morning and evening had one bowl of rice each, given to them, and were ordered to begin weaving at the 5th watch, (2 A M,) and continued till the third watch (10 P M,) when they were allowed to rest, and if they were at all slow, they were beaten very severely until the blood flowed from them; and if afterward were not very quick at weaving, and did not work well, their employers killed them, cut their bodies in pieces, and buried them under the ground in the house. They had already in this ruthless manner murdered successively five persons, said the boy, and now I am the sixth. The people hearing these things were greatly irritated, and immediately seized the husband and wife of the firm of Yun sang, and delivered them to the magistrate of Nanhae to be tried.

Those who talk of the civilization of China know but little about it.

Presence of Mind.

Bailey, who was sentenced to the State's prison for life a few days since, for an attempt to assassinate Mr. Hotchkiss in Brooklyn, L. I., was, at the age of sixteen years, sentenced to transportation for life in an English court for burglary. He remained at Van Dieman's Land for several years, and then secreted himself on board a whaling vessel, for the purpose of making his escape. His absence was discovered before the vessel sailed, and as it was suspected that he was on board the whaler, the authorities had lances thrust among the oil barrels in order to ascertain whether he was on board or not. He was secreted near the kelson, perfectly safe, as he thought, having a friend in one of the sailors to furnish him with food. The searchers, in thrusting down the lance, passed it through his leg.—Bailey knowing that if blood was found on the instrument he would be discovered, took a handkerchief from his pocket and wiped the blade as it was withdrawn from the wound, thereby escaping discovery. The vessel was afterwards smoked with brimstone, but he succeeded in keeping his place, and remained in it thirty days after the vessel left port, living on what his friend, the sailor, secretly furnished him. This hardened ruffian stated, when he approached the gate of the prison at Sing Sing, that when he passed through that gate it would be the third time he had entered a prison under as many different sentences of imprisonment for life.

The Iron Duke and Miss Coutts.

The story ot the projected marriage between Miss Burdet and the iron Duke, originated in a mere joke, Miss Burdett having called upon the duke, with a large sum of money for the erection of churches in the Colonies, the Duke praised her generous liberality, adding playfully. "You deserve to be a Du'chess," to which the Marquis of Douro, who was present, remarked—"You see, Miss Burdet, my father makes you an offer."

Phenomena in Mobile.

The curious, says the Mobile Tribune, have within a day or two past, been attracted to the premises of Dean Knox, Esq. on St. Emanuel street, to inspect a natural phenomena, which though not uncommon, is rarely presented in so interesting a form. A well had just been sunk to the depth of seventeen feet, and upon penetrating a stratum of black, offensive swamp mud, some twelve or fifteen inches thick, affording a slight flow of water, a strong current of carbonic acid gas of considerable volume was struck. The well is of the usual diameter, and in a few moments the whole space was filled with the poisonous vapor, almost destroying the life of the man engaged in digging, before he could be drawn to the surface. The water has gradually increased until it is now about a foot and a half in depth and the current of gas rushing out underneath produces a violent commotion, with a noise resembling the rapid boiling of a large cauldron or pot. Several years ago, a well of about the same depth was sunk two or three squares north of the present one, in a direct line, where the same or a similar current of gas was encountered. A stratum of mud of the same character was cut through, without, however, obtaining water. The well was subsequently filled up.

It is a remarkable feature in the geological structure of Mobile and also for several miles around, wherever wells have been dug or bored, this stratum of swamp mud is found, often intermixed with leaves and trunks of trees. It is supposed that this peculiar deposite elaborates the carbonic acid gas, but we have no knowledge of its having been encountered, although upwards of a hundred wells have been dug in the city and vicinity, except in the two instances mentioned above.—Invariably there is found resting upon the mud, a thin stratum of clean white sand,—where, generally, pure water is to be procured.

Anecdote of Allston the Painter.

Mr. A. had contracted with one B. to build him a house, and had entered into the usual specifications When the house was nearly completed and the exterior decorations were putting up, Mr A. objected that the preparations for a cornice extended only to three sides of the house. The builder insisted that although it had not so run in the contract, yet it was usual to omit it on the back of the house, and he therefore refused to put on the fourth side. Whereupon Mr A. said that he would not press the matter, but of course the builder could not object to his choosing the side which should be left without a finish, and he therefore chose the *front*. The builder unable to object, did as he was ordered, but unwilling to have this advertisement of his unfaithfulness, and un-workman-like character staring him and the public in the face, beggedleave to place the cornice on the fourth side

A Female Miser.

On searching the house of an old woman in Boston, who pretended to be very poor and took in washing, there were found some thirty packages of gold pieces, and in some of these packages were also found very small wads of paper. As these appeared to be done up very compactly and in the smallest possible compass, curiosity induced the officer to carefully unroll one of them, and to his surprise he found it to contain a $5 bill. The whole amount of money found in the chest was over $600. Some property was also found which the daughter of the woman had stolen from her employer.

Daguerreotype.

That able artist in dnguerreotype, Mr. Augustus Morand, from the United States, of whom we have had occasion to speak heretofore, has merited the honor of being called to the Palace to take the portraits of his Imperial Majesty, and of the august Princesses; also some views from the palace windows of the Palace at Sao Cristavao. We have seen also a beautiful copy of the late Imperader, (the founder of the Empire) which hangs in the Reception-chamber of the Palace; and we could not help but admire the perfection of the copy. His Studio may be visited at all hours of the day, where a number of those beautiful specimens may be seen.—*Rio Janeiro Journal of Commerce.*

TO CORRESPONDENTS.

"N. S. A., of Nashville, Tenn."—No damages can be brought against any person for using what is claimed by their patent and covered by letters patent, until that is set aside.—But patentees must take care and not use that covered by another person's patent along with their own with impunity.

Wood's Patent has expired long ago, but was extended. We shall endeavor to gain the whole length and breadth of the claim as soon as possible.

"C. H. P, of Mass."—Any gum, or resinous substance that can be dissolved in ether, will make the quickest drying varnish. We shall publish a number of receipts bye and bye.

"H. B. A., of N. Y."—The information you request is not to be found in any work whatever. The fee is $30, and you will need to get a correct model made to send along with the specification. We cannot do the business upon the same terms as Mr. Hills. Duplicate drawings are also necessary.

"E. T. W. and C., of Vermont"—See No. 19, Vol. 2. Sci. Am., where there is an engraving of Mr. Guyon's Press, used for pressing very extensively in the Southern states. Address Mr. H. G. Guyon, No. 95 Thompson-st. New York.

"R. R C., of Ohio."—In applying for a patent you must get a pencil made with your improvement on it. It is impossible for us to tell what would be the worth of a patent, if obtained. The cost of application for your patent, taking into consideration $30 for fee, and the number of drawings and tables to be made, would be $20 more at least, fifty altogether.

"S. E. A., of N. J."—See No. 36, Vol. 2, Sci. Am. for galvanizing iron. It will not answer for fine instruments ot cutlery. There is no index but the one we keep for reference as the great number of articles would occupy all of two numbers. Our practice is to condense, in a clear style. "Multum in Parvo" is our motto.

"T. S. W., of Maine."—Your drawing and description of your water wheel has been received and so far as our knowledge extends, and that is not a little, the principle is new. An operative model should be instantly made to test fully its merits.

"A. W. S., of Ohio."—We have sent to you the desired information by mail.

"L. B., of N. Y."—All the information requisite for making application for Patents, can be found in Vol. 2, Sci. Am.—in the first numbers We advise every inventor who is able, to make application for himself, and thereby save some expense. There are forms and rules that will require some study, but you can soon master them.

"C. P., of Ga."—You will find all the information you can desire respecting the construction of chimneys in No. 17, Sci. Am. Vol. 2.

"S. G., of Ct."—We should advise you to have an engraving of your improvement and insert it in the "Scientific American." You not only secure your invention from infringement in so doing, but it leads others to bring out their inventions if they have any similar, and then you can better judge the expediency of applying for a patent. An engraving and insertion will cost you $5.

"G. D. of Winslow, Indiana."—Your object glass for a telescope was sent before your last letter came to hand, and was forwarded according to your first instructions.

"D. C., of Pa."—We do not know whether the Scientific Mechanic is actually dead or not. It has always been in a very sickly condition, and was not able to *come out* at all last week, but perhaps it will regain strength enough to be about for two or three more weeks on the whole, but probably not enough for as many as three consecutive ones. 'Peace to its remains.'

"W. H. T., of N. Y."—We are much obliged to you for your kindness and recognise in you an old friend, could you not get up a Mechanics Mutual in Gallupville, your intimate and esteemed acquaintance Mr. Leddy, of Albany, is the chief officer in this state.

"E. H., of Boston,"—We shall answer by mail. We agree, but only have had different ways of presenting our views.

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"S. D. D., of Boston,"—We will endeavor in the course of two weeks to get the information desired about the organic vibrator.—We have sold the Cord Machine.

The Credit not all our Due.

Perhaps not many of our correspondents who express so much gratification at the improvements we are constantly making by increase of interesting and valuable matter contained in the columns of the Scientific American, consider that a proportionate share of the credit which they so bountifully bestow on the publishers is actually due themselves.

We would ask who is the prime mover in this great cause? What makes the Scientific American the most popular weekly Mechanical publication in the world? What has given it a more extended circulation than all the other mechanical papers published in America combined? It is yourselves, our worthy patrons, in connexion with the united efforts of the publishers, that have brought about these results and we feel to express to you our gratitude. It is you that have exerted the influence on your neighbor and induced him to become our patron. It is you that have furnished us the means to procure talented Editors. It is through you that we are enabled to procure at an enormous expense from five to seven original engravings, each week, to illustrate the handiwork of American genius: and to you shall the praise be given.

We were led to make the above remarks from the repeated flattering communications lately received respecting the improvements made in our journal within the past year, and desiring to bestow merit where justly deserved, has induced us to unfold to you the true cause why we are enabled to make such improvements. Many new journals, purporting to be of the same class and nature of our own have been ushered into existence since the Scientific American first started, but where are they now? With one or two exceptions they have all been obliged to stop for want of patronge, while our list of subscribers has been rapidly increasing from its commencement until it has now attained a larger circulation than all the other journals of its kind in America.

Will you accede to it?

Those of our subscribers who appreciate the improvements constantly being made in the "Scientific American," (and all that express any opinion at all in regard to it, apparently do,) see by the paragraph preceeding this, to whom the credit is bestowed, and that the whole cause of its future advancement rests upon themselves, the publishers acting as their agents. We now inquire of you, if you will continue your exertions, and make a still greater effort to improve the "Sci. Am." than you have already done: which altho' not surpassed nor equalled by any journal now published in America, yet may be improved, and made more useful, it each and every one will use a little influence to extend its present wide circulation still farther. The foreign mechanical periodicals speak well of us,—says one of them, "It is a journal that bespeaks honor to the nation," but we are ambitious to have it *far* excel any thing of the kind published in aristocratic Europe, and we now appeal to you to enable us to make it so. Every person who takes the paper now can easily procure at least one more subscriber, which will give it a circulation that we can afford to fill each number with as much and as good matter as any of the foreign journals publish in their monthlies at a price of $5 per annum, while the American is issued at nearly one-third of that price, four times as often.

Will each of you procure a subscriber for us, or induce a club of ten to subscribe for the sum of $15 per annum? If you do it we shall devote that extra profit to your benefit by publishing matter that we are now unable to furnish and that no other periodical can supply unless they have a circulation of at least 20,000 regular subscribers.

Chambers' Miscellany.

No. 6 of this work is just issued—price 25 cents—and for sale by Berford & Co., No. 2 Astor House. We cannot speak in too high terms of this excellent work. It should be in every library.

Fate of Infidelity.

A neat little work bearing this title and containing many interesting truths just published and for sale by Edward Walker 114 Fulton St.

Brooklyn Institute.

We have been informed that the directors of this institution have made arrangements for the delivery of a course of lectures, by Prof. Agassiz, the celebrated naturalist; also a series of readings and recitations by Mr Vanderhoff, the tragedian, who in connection with other popular lectures, artists, &c., will without doubt render the evening entertainments at the Institute during the forthcoming winter season both agreeable and instructive.

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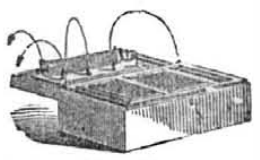
DROPSY, JAUNDICE AND CONTRACTION OF THE LEG.



Dr.Smith's Torpedo Magnetic Machine.

☞ The following is an extract of a letter from Sarah Sanger, No. 154 Delancey st.

New York, Aug 3, 1846.

I do hereby certify that I was grievously diseased with a dropsical swelling, jaundice, and contraction of my left leg, owing to a fall which wrenched my back, and the interior part adjoining. I called in two physicians, but my health still continued to sink rapidly away, so much so, that they could do no more for me. In this state, I heard of Dr. S B. Smith's Electro Magnetic Machine, and by the use of the machine about two months, I was restored to health. If my name can be of any service to Dr. Smith, he is very welcome to it, as I firmly believe had it not been for his machine, I should now have been in my grave.

SARAH SANGER, No. 154 Delancy st.

A manual with full dir ctions, accompanies each machine, which is warranted for 20 years, put up in elegant rosewood and zebra wood cases, 9 inches long, 5 1-2 inches wide and 5 high—Price $12.

Orders from any part of the United States promptly attended to. Address
o2 tf MUNN & CO. (post paid) New York.

WOOD CUTS.

☞ We would inform Newspaper and Periodical publishers that we have on hand a large lot of Wood Engravings, which have been used in the Scientific American during the past year, which we are desirous of disposing of cheap. They are in fine order and may be had at one fourth of their original cost Publishers of country papers would find it to their interest to avail themselves of this chance to illustrate their publications at a cheap rate.

Address at this Office. s18 tf

To Machinists, Carpenters and others.

Mr. Wm. A. Ashe, Professor of Mechanical and Architectural Drawing has opened Evening Classes for the purpose of giving instructions in **Architectural and Mechanical Drawings,** in all their branches, from the first use of the instruments to the highly finished and beautifully shaded drawing, suitable for framing or the Patent Office.

W. A. Ashe's Drawings have gained him many prizes in several Mechanics' Institutions in Europe, and great reputation in the Patent Office, Washington, and the Mechanics' Institute, Brooklyn, (where he was a teacher for two years,) and among the various Patent Agents of this city. As the classes will be limited, an early application will be necessary to insure admittance.

For terms and particulars, apply to W. A Ashe, at his establishment, 133 Fulton street, opposite the Sun Buildings. o30 1m

Ballard's Improved Jack Screw.
PATENTED.

The advantages of this Screw for Stone Quarries Railroads, Steam-boiler Builders, and for other purposes, are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires.

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler makers have them in use, by whom they are highly recommended.

JACK SCREWS,
Of various sizes, power and price, constantly on hand at the manufactory,
No. 7 Eldridge street, near Division.
o16

Proposals for Carrying the Magnetic Telegraph across the Hudson River.

☞ The undersigned are prepared to receive proposals for extending the wires of the Magnetic Telegraph Co. over the Hudson River, at some point as near the city of New York as practicable

Proposals will be received until the tenth day of November next, and all necessary information can be obtained on application by letter or otherwise, to either of the nndersigned.

B. B. FRENCH, Washington City.
JOHN W. NORTON, 23 South st. New York.
THOS. M. CLARK, 90 South st. New York.
o23 tf

PATENT AGENCY AT WASHINGTON.
ZENAS C. ROBBINS,
Mechanical Engineer and Agent for procuring Patents.

Will prepare the necessary Drawings and Papers for applicants for Patents, and transact all other business in the line of his profession at the Patent Office. He can be consulted on all questions relating to the Patent Laws and decisions in the United States or Europe. Persons at a distance desirous of having examinations made at the Patent Office, prior to making application for a patent, may forward (post paid, enclosing a fee of five dollars) a clear statement of their case, when immediate attention will be given to it, and all the information that could be obtained by a visit of the applicant in person, promptly communicated. All letters on business must be post paid, and contain a suitable fee, where a written opinion is required.

Office on F street opposite Patent Office.

He has the honor of referring, by permission, to Hon. Edmund Burke, Com. of Patents; Hon. H. L Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B. Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U.S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

GENERAL PATENT AGENCY.
REMOVED.

The SUBSCRIBER has removed his Patent Agency from 12 Platt to 189 Water street.

The object of this Agency is to enable Inventors to realize something for their inventions, either by the sale of Patent Goods or Patent Rights.

Charges moderate, and no charge will be made until the inventor realizes something from his invention.

Letters Patent will be secured upon moderate terms. Applications can be made to the undersigned, personally or by letter post paid.

m8 3m* SAMUEL C. HILLS, Patent Agent.

Johnson's Improved Shingle Machine.

The Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

Machinists Tools.

The Subscriber is now manufacturing a superior article of Large Turning and Screw Cutting Lathes, Drilling Machines, &c. to which he would respectfully call the attention of Machinists and others requiring the above articles. Also, Machinery of every description, manufactured to order, at 42 Gold street, New York. G. B HARTSON. o2 1m*

DAUGERRIAN GALLERY.
GURNEY'S
PREMIUM DAUGERRIAN GALLERY.
No. 189 Broadway, N. Y.

☞ Pictures taken at this establishment warranted to give satisfaction. j24

Veni! Vidi! Emi!

☞ THIS IS THE MOTTO OF ALL THOSE THAT HAVE EXAMINED KNOX'S NEW FALL STYLE OF HATS, with a view of buying—

I CAME! I SAW! I BOUGHT!

His BON TON Establishment (as all know) is at 128 Fultou street. s18 3m

AGRICULTURAL TOOLS.

INVENTORS and Makers of superior Agricultural Implements are notified that the subscriber will sell such articles on commission, and make prompt returns. SAMUEL C. HILLS,
m8 3m* 189 Water st.

AMERICAN HARDWARE.

The SUBSCRIBER having been engaged in selling American Hardware on commission for 7 years, solicits consignments from manufacturers, and will refer to those who have employed him the above number of years. SAMUEL C. HILLS,
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Lap-welded Wrought Iron Tubes
FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

These Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

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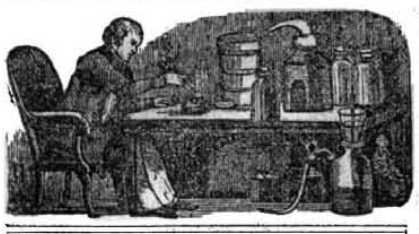


To Dye a Green Color.

On woolen goods, boil the goods, which must be well cleaned, in a boiler along with some of the sulphate of indigo and fustic.—Yarn must be well turned in the liquor and cloth well stirred. The depth of shades depends on the quantity of indigo used. The fustic must be added or diminished according to the yellowness of the shade wanted. About a pound of fustic to a pound of goods, is about enough for a common shade The sulphate of indigo is made by adding the flour of indigo of the best quality, to vitriol, about 1lb. of indigo to the 5 of vitriol and adding gradually for two days stirring frequently at the same time. The sulphate of indigo should never be used before it is nine days old. It is worth twice as much after this time, as it would be if used before. A little alum is added to the woolen cloth. The sulphate of indigo will dye many shades of blue.

Green on silk is dyed with the same stuffs as wool, or woolen goods, only not boiled, and a little quantity of turmeric used. It is requisite to dye at a good heat.

Green on cotton, is dyed by dipping the goods first in a blue vat, then washing them and pressing them, and then running them through a solution of sugar of lead and afterwards through a solution of the bichromate of potass airing them and running through the lead again. Three parts of the lead to one of the chrome are the proportionate quantities.—The sulphate of zinc and litharge are also used as mordaunts. The depth of color is regulated by the darkness of the blue. All goods should be well washed for finishing. Any person can soon hit the depths of shade by practice, if they have an eye for colors.

Another method: After the goods are dyed blue, wash them, run them through pyroligneous acid pretty strong, wash them and run them through a solution ot Quercitron bark, at the rate of 4 lbs. of bark to 10 lbs. of cotton. The quantities always in proportion to the depth of the shade.

Another method, and one good for carpet rags, and with which every housewife ought to be acquainted: Scald about two pounds of ground logwood and boil about five pounds of fustic well; take the clear of this and put in about 4 ounces of the sulphate of copper, (blue vitriol,) and keeping the liquor at a good heat for some time, it will dye ten pounds of cotton carpet rags and twenty pounds of woolen carpet rags, a good dark green. This is a cheap and easy dyed color.

These colors may be depended on. They are not receipts that will not operate as described—we have tested them. The woolen green is not a pure fast color though.

Painting on Glass.

It is a singular fact, that the art of glass-painting, practised with such success during the former ages from one end of Europe to the other, should gradually have fallen in such disuse. In the beginning of the last century it came to be generally considered as a lost art. In the course of the eighteenth century, however, the art again began to attract attention, and many attempts were made to revive it. It was soon found by modern artists, that by employing the processes always in use among enamel painters, the works of the old painters on glass might in most respects be successfully imitated; but they were totally unable to produce any imitation whatever of that glowing red which sheds such incomparable brilliancy over the ancient windows that still adorn so many of the churches in Europe.

For this splendid color they possessed no substitute, until a property, peculiar to silver alone among all the metals, was discovered, which will presently be described.

The art of enamelling on glass differs little rom the well known art of enamelling on other substances. The coloring materials, which are exclusively metallic, are prepared by being ground up with a flux, that is, a very fusible glass composed of silex, flint glass, lead and borax; the color with its flux is then mixed with a volatile oil, and put on with the brush. The pane of glass thus enamelled is then exposed to a dull red heat, just sufficient to soften and unite together the particles of the flux by which means, the color is perfectly fixed on the glass.

Treated in this way, gold yields a purple; gold and silver mixed, rose color; iron, brick red, cobalt and blue; mixtures of iron, copper and manganese, brown and black. Copper which yields the green in common enamel painting, is not found to produce a finer color when applied the same way to glass, and viewed by transmitted light; for a green therefore, recourse is often had to a glass colored blue on one side and yellow on the other. To obtain a yellow, silver is employed, which either in the metallic or any other form, possesses the singular property of imparting a transparent stain when exposed to a low red heat in contact with glass. This stain is either yellow, orange or red, according to circumstances. For this purpose no flux is used; the prepared silver is merely ground up with ochre or clay, and applied in a thick layer on the glass.

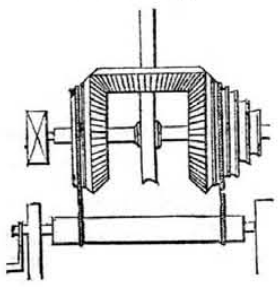
When removed from the furnace the silver is found not at all adhering to the glass; it is easily scraped off leaving a transparent stain: which penetrates to a certain depth. If a large proportion of the ochre has been employed, the stain is yellow: if a small proportion, it is orange colored, and by repeated exposure to the fire without any additional coloring matter, the orange may be converted into red. This conversion of orange into red is, we believe a matter of much nicety, in which experience only ensures success. Till within a few years this was the only bright red in use among modern glass painters; and though the best specimens certainly produce a fine effect, yet it will seldom bear comparison with the red employed in such profusion by the old artists.

Besides the enamels and stains above described, artists, whenever the subject will allow of it, make use of panes throughout their substance in the glass-house melting pot, because the perfect transparency of such glass gives a brilliancy of effect, which enamel-coloring, always more or less opaque, cannot equal. It was to a glass of this kind that the old glass painters owed their splendid red.—This, in fact, however, is the only point in which the modern and ancient processes differ, and this is the only part of the art which was, ever really lost. Instead of blowing plates of solid red the old glass-makers used to flash a thin layer of red over a substratum of plain glass.

(To be Concluded.)

MECHANICAL MOVEMENTS.

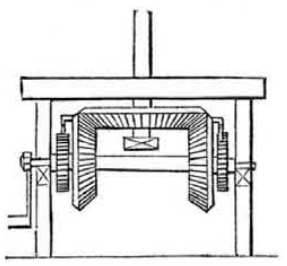
Bevel Gearing.



The above cut represents three bevel wheels geering into each other, that on the left being fast on the horizontal shaft, that on the right loose, and the upper one loose on the perpendicular shaft, which is held to the horizontal shaft by a circular hole at the common centre of the bevils.

Supposing the two bevels on the horizontal shaft to be revolved in opposite directions at equal velocities by means of the drum beneath, the upper bevel would be revolved on a stationary centre, but supposing the band which revolves the right hand bevel to be removed into one of the smaller pullies with which it is connected the speed of the two lower bevels will no longer remain the same, and the top bevel will partake of two motions one round its own centre and another round the centre of the horizontal shaft.

Another Motion.



The horizontal shaft carries two bevels, which are loose and furnished with clicks which take into the two reverse ratchet wheels attached to the same shaft, and the bevel above geers into both.

Supposing an alternate revolution to be given to the horizontal shaft, a continuous motion will be imparted to the bevel above.

Mode of Renovating Apple Orchards.

Prune thoroughly and dig well and deep round every tree and cut away all the sprouts Then scrape off all the loose bark and dig out the borer with a sharp pointed knife and pointed wire; then throw around each tree about half a bushel of unleeched ashes and covered with six inches of good manure and cover the whole up with at least one foot of good earth and by this method old trees will renew their youth, and if washed with cold soap suds frequently after a shower, they will be mueh invigorated. Every farmer should have a portable force pump, or rather a small fire engine, to sprinkle his orchard. One worth sixty dollars, with metallic valves to throw weak alkaline solutions on the trees, would soon make a fortune to the fruitist.

French Green.

This is a beautiful pigment surpassing all other green paints. It was discovered by M. Sattler in France, in 1814, who made it very profitable until 1822, when M. Liebeg, the celebrated German chemist, published an account of its composition.

The way to make it is, 8 parts of arsenous acid, 10 parts of verdigris, the latter being diffused through water at 120, and passed through a sieve when it is then mixed with the arsenic and set aside to incorporate for a few days. It is a rank poison.

Panorama.

A Panorama is a picture in which all the objects of nature that are visible are represented on the interior surface of a round or cylindrical wall, the point of view being in the axis of the cylinder. The rules according to which the different objects are represented in perspective are easily deduced from the consideration that the lines are on the panorama are the intersections of the cylindrical surface of the picture, with one or more conical surfaces having their summits at the point of view, and of which the basis are the lines of nature which the artist proposes to represent. In executing this kind of perspective, the artist divides the horison into a great number of parts, twenty, for example, and draws. in the ordinary way, on a plane surface, a perspective view of all the objects comprised in each of these portions of the horizon. He then paints on a canvass, representing the development of the cylindrical surface, the twenty drawings, in as many vertical and parallel stripes; and the picuture is completed by stretching the canvass on the cylindrical wall of the rotunda which is to contain the panorama. When a painting of this kind is well executed, its truth is such as to produce a complete illusion. No other method of representing objects is so well calculated to give an exact idea of the general aspect and appearance of a country as seen all round from a given point.

Twisted Wires in Telegraphing.

The *London Railway Gazette* lays it down as a well-founded axiom in electric science, that the current is rapid in proportion to the thickness and uninterrupted position of the wires; add that through a coil of [only] 2,500 yards [less than a mile and a half] of the finest copper wire made, (No. 35,) insulated and tightly wound in a coal, the electric fluid has the same difficulty, *and takes the same time in passing*, over 100 miles of wire, perhaps one-eighth of an inch in diameter, and 100 miles in length, *not coiled*, but perfectly unobstructed.

Magnetic Magic Mirror.

Baron Dupotet, the great Paris Magnetiser, has invented a Magic Mirror, which he supposes to be the same that was among the professors of the "black art" in former times. It is a small instrument, made of a substance resembling dull white metal. The Baron explains its effects as being produced by the transmission of the matiere animante of his own body into the metal.—Many people have been thrown into convulsions by the bare approach of the mirror, while others declare amid the transports of grief, or the stupefaction of surprise, that they behold reflected on its surface various scenes of their past lives, or saw themselves engaged in acts which they remembered not, therefore suppose that they must be anticipations of the future, Wonderful, if true.

New use of Daguerreotype Art.

The *Art Union* says that M. Brunel, a contractor on the Italian and Austrian Railroad from Florence to Bistaja, has a daguerreotype picture sent him every evening, which represents the state of the works at the point of where it was taken. Thus he has at the end of every day exact informatian of the progress of the style in which the building has been conducted.

Fattening Poultry.

It is asserted in the Transactions of the Society of Arts," that there is a great advantage in fattening geese, turkeys, and in short, fowls of every description, on potatoes mixed with meal. On this diet they are said to fatten in less than one half the time ordinarily required to bring them to the same condition of excellence on any kind of corn or even on meal itself. The potatoes must be boiled, and mashed fine whilst they are hot, and the meal added just before the food is to be presented.

Russian Ink Powder.

Blue galls two ounces, Gum Arabic half an ounce, sulphate of iron four ounces, all powdered and well mixed together.

THE NEW YORK

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